



GUAM ENVIRONMENTAL PROTECTION AGENCY • *AHENSIAN PRUTEKSIÓN LINA'LA' GUÁHAN*

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Project Summary – as submitted to NOAA on October 26, 2018

The Government of Guam, through the Guam Environmental Protection Agency (EPA) and the Guam Department of Agriculture, Division of Aquatic and Wildlife Resources (DAWR), is seeking a \$250,000 FY19 Marine Debris Removal Grant from the National Oceanic and Atmospheric Administration (NOAA) to remove one of two nearly 50-year old tire reefs in a NOAA Habitat Focus Area Site widely used for recreation, fisheries, and commercial tourism.

The proposed removal project seeks to remove a tire reef created in the 1970's, by fisheries scientists, as an experiment to increase fish stocks by building artificial habitats within Cocos Lagoon. (Guam Fish and Wildlife, 1972) Cocos Lagoon, which is a part of the Manell-Geus Habitat Focus Area, is Guam's only shallow water lagoon that houses significant marine resources. It is an important recreational and subsistence fishing area and home to numerous tourism operations. The tire reef project was discontinued in 1973 since it did not demonstrably improve fish stocks within the lagoon. If left in place, the tire reef could become loose debris that damages sensitive species within the lagoon and a source of heavy metal contamination that would pose risks to the human community.

The tire reef project installation consisted of two locations. Cocos Artificial Reef A, or CARA, the smaller tire reef consisting of 351 tires, has not been located by local resource managers. Cocos Artificial Reef B, or CARB, the larger tire reef consisting of 2,482 tires, is located at 13.255248N, 144.665588E. The proposed project will document ecological site conditions at CARB before designing a suitable removal and disposal protocol of the tire reef.

Surveys to locate CARA will continue throughout the duration of the proposed project. CARB sits on a sandy, silty substrate approximately 20 feet deep with a current volume of about 21,531 ft³ (48.5 x 45.3 ft x 9.8 ft). The project team is proposing to remove only the visible tires of CARB to reduce the amount of environmental damage by siltation to surrounding ecosystems within the lagoon. The project team anticipates about half of CARB's tire amount will be removed through this project, with a concentration to remove only the visible tires of the artificial reef. The combined weight of the tires to be removed is estimated to range from approximately 15 to 25 tons. The project team will work with a contractor to use a lift system that will lift tires to the surface. A barge will be available at the removal site to lift tires out of the water and take them to shore, where they will be transferred to a proper disposal site.

The proposed removal plan will be fully developed based on site conditions, discussions with stakeholders, regulatory authorities and resource managers, and the capacity of the contractor chosen through the Government of Guam procurement process. An initial ecological survey will be conducted by the project team to document current fish populations, invertebrate populations, coral recruitment, and algal growth at CARB. Coral colonies will be identified and removed from this location and transplanted to a suitable recruitment site within the lagoon prior to the removal process. The project team will monitor the transplanted coral colonies throughout the project period.

The total project cost is \$435,000 with the project team providing \$185,000 of in-kind services through staff time, equipment, and supplies. The team is requesting \$250,000 in federal funding to procure supplies for the project and secure a contract for the removal and disposal work, which Government of Guam agencies lack the capacity to perform. The project will occur over a three year period to allow time for pre-removal

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ALL LIVING THINGS OF THE EARTH ARE ONE • *MANUNU TODU I MANLÁLA'LA'*

surveys, permitting processes, procurement of an appropriate removal and disposal contractor, and post-removal monitoring. Cleaning up the artificial tire reef is an important step to insure no additional harm to surrounding ecosystems. Removal of the artificial tire reef will help prevent any further damage to the natural habitat that may negatively impact the biological, economical and cultural value of Cocos Lagoon. The project team will also be promoting awareness and prevention of marine debris through this clean-up and various outreach efforts to help better conserve and manage the island's coastal and marine ecosystems.

The Guam EPA and DAWR will be co-principal investigators on this removal project. The project will also include the Guam Coral Reef Response Team. Local partners of the Guam Coral Reef Response Team, which includes the Guam Bureau of Statistics and Plans Coastal Management Program, Guam Department of Agriculture, and University of Guam (UOG) Marine Lab. Federal partners of the Guam Coral Reef Response Team include USEPA, NOAA Fisheries Pacific Islands Regional Office (PIRO), NOAA Office for Coastal Management (OCM), National Park Service (NPS), Joint Region Marianas, and US Fish and Wildlife Service.